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FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP
901 NEW YORK AVENUE, NW
WASHINGTON, DC 20001-4413

EXAMINER	
MEKHLIN, ELI S	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/587,932	SARE ET AL.	
	Examiner	Art Unit	
	ELI MEKHLIN	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-56* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-56* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/2/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

ETAILED ACTION

(1)

This is the first office action on the merits. Claims 1-56 are pending before the Office for review.

(2)

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 7-8, 17-18, 20-25, 32, 34-35, 39 and 55-56 are rejected under 35 U.S.C. 102(b) as being anticipated by BROOME et al. (U.S. Patent No. 6,074,474).

With respect to **claim 1**, BROOME teaches a pigment-containing slurry that can be added to a latex paint formulation to produce a latex paint formulation with improved properties. Abstract, Col. 3, Lines 32-33. Specifically, BROOME teaches that a latex paint formulation is combined with a pigment-containing slurry to produce a latex paint formulation with improved tint strength when compared to the initial latex paint formulation. Col. 1, Lines 30-34, Col. 3, Lines 24-25, 32-33, 44-47. The second paint, which contains the pigment-slurry, has an improved tint strength to the first paint, which is chosen for its opacity. Col. 1, Lines 30-34, Col. 3, Lines 24-25, 32-33, 44-47. The pigment-slurry includes non-titanium dioxide white pigments. Col. 3, Lines 54-55.

With respect to **claim 2**, BROOME teaches that the white pigment is in the form of white minerals. Col. 3, Lines 54-55.

With respect to **claim 3**, BROOME teaches that the non-titanium dioxide white pigment is in slurry form. Col. 3, Lines 32-33.

With respect to **claim 4**, BROOME teaches that the white minerals are chosen from silica (Col. 3, Line 55), nephyline syenite (Col. 4, Line 9), aluminum trihydroxide (Col. 4, Line 8) and barite (Col. 4, Line 8).

With respect to **claim 5**, BROOME teaches that the white mineral can be precipitated calcium carbonate, which is synthetic calcium carbonate. Col. 3, Lines 54-55.

With respect to **claim 7**, BROOME teaches that the white minerals can be dry-ground instead of used in slurry form. Col. 1, Lines 60-61, Col. 2, Lines 10-12.

With respect to **claim 8**, BROOME teaches that the white mineral can also be diatomaceous earth. Col. 4, Lines 8-9.

With respect to **claim 17**, BROOME teaches that the white mineral can be calcium carbonate. Col. 3, Lines 54-55.

With respect to **claim 18**, BROOME teaches that the white mineral can be talc. Col. 4, Line 7.

With respect to **claim 20**, BROOME teaches that the white mineral can be silica. Col. 3, Lines 54-55.

With respect to **claim 21**, BROOME teaches that the produced paint can have a PVC of 50%, which lies within the claimed range. Table 3, Sample 1.

With respect to **claim 22**, BROOME teaches that the produced paint can have a PVC of 50% or 60%, which lies within the claimed range. Table 3, Samples 1 and 2.

With respect to **claim 23**, BROOME teaches that the produced paint can have a PVC of 60% or 70%, which lies within the claimed range. Table 3, Samples 2 and 3.

With respect to **claim 24**, BROOME teaches that the produced paint can have a PVC of 70%, which lies within the claimed range. Table 3, Sample 3.

With respect to **claim 25**, BROOME teaches that the pigment-slurry is added to a latex paint formulation to obtain a second paint with improved properties, which is also a latex paint formulation. Col. 3, Lines 32-33.

With respect to **claim 32**, BROOME teaches that the optical property that can be improved by adding the pigment-slurry is tint strength. Col. 3, Lines 20-25.

With respect to **claim 34**, BROOME teaches that the pigment-slurry is a blend of pigments comprising at least two white pigments. Col. 3, Lines 20-25, 35-40, 54-55.

With respect to **claim 35**, BROOME teaches that the multi-pigment-slurry comprises at least two white minerals. Col. 3, Lines 35-40, 54-55, Col. 4, Lines 6-9, 28-30.

With respect to **claim 39**, BROOME teaches that the pigment-slurry is added to a latex paint formulation to produce an improved latex paint formulation. Abstract, Col. 3, Lines 32-33.

With respect to **claim 55**, BROOME teaches a process for preparing a pigment volume concentrated paint system (PVC tinted system). Abstract, Col. 3, Lines 32-33. Specifically, BROOME teaches that a latex paint formulation is combined with a

pigment-containing slurry to produce a latex paint formulation with improved tint strength. Col. 3, Lines 24-25, 32-33, 44-47. BROOME teaches that the pigment-slurry contains non-titanium dioxide white pigment. Col. 3, Lines 54-55.

With respect to **claim 56**, BROOME teaches that the first and second media is a latex paint formulation. Col. 3, Lines 32-33.

(3)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 37-38, 40-41 and 46-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over BROOME et al. (U.S. Patent No. 6,074,474).

With respect to **claim 20**, BROOME teaches that the white mineral can be silica but does not explicitly state that the silica is crystalline.

However, BROOME does teach that pigment additives to the paint formulations are designed to increase the spacing of individual titanium dioxide particles to obtain optimal use of the particles and introduce air voids into the dried paint to increase dry hiding. Col. 1, Lines 40-59.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention to use crystalline silica based on BROOME'S teachings because crystalline silica, due to the fixed nature of the compound's components relative to one another, efficiently introduces air voids into the paint when added thereto. Specifically, a person having ordinary skill in the art would appreciate that structural configuration of crystalline silica allows for the introduction of multiple air voids when the compound itself is added to paint formulations.

With respect to **claim 37**, BROOME teaches that the pigment-slurry is added to the latex paint formulation to improve, among other properties, the tint strength of the paint. Col. 3, Lines 24-25, 32-33. Although BROOME does not expressly state that the tint strength is measured before addition of the pigment-slurry, a person having ordinary

skill in the art at the time of invention would understand that measuring the effect of the addition of pigment-slurry to a paint requires determining the pre-addition and post-addition value of a given property. Specifically, it would have been obvious to a person having ordinary skill in the art at the time of invention to measure the optical property of the paint prior to combining the paint with the pigment-slurry because failing to do so prevents the determination of whether the pigment-slurry improves any properties of the paint. Succinctly put, the absence of pre-combination measuring prevents the determination of whether the pigment-slurry actually improves any of the paint's optical properties.

With respect to **claim 38**, BROOME teaches that pigment-slurry is added to the latex paint formulation in an amount to provide requisite levels of tinting strength. Col. 3, Lines 24-25. Although BROOME does not explicitly state how a requisite level is determined, BROOME does teach that one of the benefits of using pigment-slurry is that improves batch to batch consistency. Col. 2, Lines 10-13. Additionally, a person having ordinary skill in the art would appreciate that bringing tint strength to the requisite level involves determining the first paint's current tint strength and determining how much pigment is needed to achieve the pre-determined requisite level. Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention to add pigment-slurry to reach a requisite level of tint strength because adding too little/too much pigment slurry prevents the attainment of the requisite level of tint strength.

With respect to **claim 40**, BROOME teaches that pigment-slurry is added to a latex paint formulation to improve the tint strength of the paint formulation. Col. 3, Lines

24-25, 32-33. BROOME further teaches that conventional paints (control samples) have a PVC of 60%, which lies within the claimed range. Table 3. Finally, BROOME teaches that after addition of the pigment-slurry to the paint formulation (first paint), a latex paint formulation (second paint) with improved tint strength is obtained. Col. 3, Lines 32-33. Specifically, a person having ordinary skill in the art at the time of invention would appreciate that using talc in the pigment-slurry and adding it to a first paint formulation to obtain a second paint formulation simply requires using BROOME'S method and selecting a white mineral additive to the slurry and adding the slurry to a conventional paint sample, which has a PVC of 60%.

Although BROOME states that talc can be the white mineral pigment that is added to the paint, BROOME does not expressly teach a talc containing pigment-slurry.

However, based on BROOME'S teachings, it would have been obvious to a person having ordinary skill in the art at the time of invention to use talc as the white pigment-slurry addition because BROOME teaches that talc is one of many white minerals that can be added, as part of a slurry, to a paint formulation to produce a paint formulation with improved optical properties, such as tint strength.

With respect to **claim 41**, BROOME teaches that the optical property that can be improved by adding the pigment-slurry is tint strength. Col. 3, Lines 20-25.

With respect to **claim 46**, BROOME teaches that pigment-slurry is added to a latex paint formulation to improve the tint strength of the paint formulation. Col. 3, Lines 24-25, 32-33. BROOME further teaches that conventional paints (control samples) have a PVC of 60%, which lies within the claimed range. Table 3. Finally, BROOME

teaches that after addition of the pigment-slurry to the paint formulation (first paint), a latex paint formulation (second paint) with improved tint strength is obtained. Col. 3, Lines 32-33.

Although BROOME states that calcium carbonate can be the white mineral pigment that is added to the paint, BROOME does not expressly teach a calcium carbonate containing pigment-slurry that is added to a paint with a PVC of 60%.

However, based on BROOME'S teachings, it would have been obvious to a person having ordinary skill in the art at the time of invention to use calcium carbonate as the white pigment-slurry addition in a paint with a PVC of 60% because BROOME teaches that calcium carbonate is one of many white minerals that can be added, as part of a slurry, to a paint formulation to produce a paint formulation with improved optical properties, such as tint strength. Specifically, a person having ordinary skill in the art at the time of invention would appreciate that using calcium carbonate in the pigment-slurry and adding it to a first paint formulation to obtain a second paint formulation simply requires using BROOME'S method and selecting a white mineral additive to the slurry and adding the slurry to a conventional paint sample, which has a PVC of 60%.

With respect to **claim 47**, BROOME teaches that the optical property that can be improved by adding the pigment-slurry is tint strength. Col. 3, Lines 20-25.

Claims 6, 16, 28-29, 33 and 48-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over BROOME et al. (U.S. Patent No. 6,074,474), as applied to claims 5, 20, 38-37, 40-41 and 46-47, and further in view of ADKINS (U.S. Patent No. 5,171,631).

With respect to **claim 6**, BROOME teaches that the pigment additive can be prepared via grinding, but is silent as to whether wet grinding is an option.

However, ADKINS, which deals with pigment systems for coatings, teaches that wet ground pigment can be added to paint. Col. 11, Lines 30-34. Although ADKINS is silent as to the benefits of wet grinding, BROOME does teach that using dry ground pigments causes handling problems in the form of dust. Col. 2, Lines 1-8. A person having ordinary skill in the art would appreciate that wet ground pigment reduces dust-related handling problems.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention to use a wet ground pigment because ADKINS teaches that wet ground pigments can be readily added to paints and BROOME teaches that dry ground pigments create excessive dust, which is a significant handling problem that a person having ordinary skill in the art would appreciate would be eliminated by the use of wet ground pigment.

With respect to **claim 16**, BROOME teaches that a white mineral pigment is used to obtain the second paint but is silent as to whether a plastic pigment can also be used.

However, ADKINS teaches that plastic pigment resins, such as a vinyl acetate/butyl acrylate copolymer, can be used in paint, along with white minerals, to improve the optical properties of the paint. Col. 10, Table I. Specifically, ADKINS

teaches that the plastic pigment resin also acts as a dispersion agent, which improves the effect of the white mineral pigment. Col. 10, Line I.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention to use a plastic pigment to obtain a second paint because ADKINS teaches that doing so improves the optical properties of the paint and that the resin helps disperse the white mineral, which would be expected to improve the effect of the white mineral.

With respect to **claims 28 and 29**, BROOME teaches that the second paint is formulated to have a certain PVC but is silent as to the relationship of PVC to CPVC in the obtained paint.

However, ADKINS teaches that PVC and CPVC, which are based on the pigment volume concentration in a paint, can be adjusted to manipulate the opacity/hiding power of paint. Col. 1, Lines 50-67, Col. 2, Lines 1-25. Specifically, ADKINS teaches that CVPC indicates a paint at which the resin component in a paint is no longer sufficient to entirely coat all of the pigment particles in a coating. Col. 2, Lines 1-6. In such a coating composition, it is possible to rely on dry hiding, which renders less critical the index of refraction for titanium dioxide. Col. 2, Lines 7-10. In CVPC lower cost, larger particle pigments can be used because the index of refraction is less critical. Col. 2, Lines 11-17.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention to vary the PVC to above or below the CVPC because doing so simply involves determining the level of opacity/hiding power that is desired in a typical

paint. Specifically, a person having ordinary skill in the art at the time of invention would appreciate that using a paint with a PVC greater than CPVC involves utilizing the presence of the extra, larger pigments to increase the dry hiding power of the paint. Additionally, a person having ordinary skill in the art would appreciate, based on ADKINS' teachings, that a paint with a PVC less than CPVC has a different opacity/hiding power than the previously described paint.

With respect to **claim 33**, ADKINS teaches that the addition of pigments is also used to provide color to the obtained paint. Col. 2, Lines 63-65.

With respect to **claim 48**, BROOME teaches that pigment-slurry is added to a latex paint formulation to improve the tint strength of the obtained latex paint formulation (second paint). Col. 3, Lines 24-25, 32-33. BROOME teaches that the pigment-slurry can comprise alkali metal alumino-silicates, which are forms of feldspar. Col. 3, Line 54. Finally, BROOME teaches that after addition of the pigment-slurry to the paint formulation (first paint), a latex paint formulation (second paint) with improved tint strength is obtained. Col. 3, Lines 32-33. BROOME teaches that the initial paint, which is a conventional latex formulation, can have a PVC of 60%, but it silent as to whether a paint with a PVC of about 70% is used.

However, ADKINS teaches that at a PVC between 50% and the CPVC, both dry hiding and wet hiding, which influence opacity, begin to exhibit effects in the paint formulation with dry hiding predominating when CVPC is exceeded. Col. 2, Lines 18-24. Titanium dioxide is required for wet hiding. Col. 2, Lines 22-24. A person having ordinary skill in the art would appreciate that at a PVC of 70%, the effect of dry hiding

begins to increase as PVC approaches CPVC, which allows for the reduction in the amount of titanium dioxide, which BROOME teaches is the single greatest line-item expense in paint formulation. BROOME, Col. 1, Lines 40-40.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention to use a first paint with a PVC of about 70% because ADKINS teaches that such a paint exhibits dry hiding and wet hiding, which lowers the demand for titanium dioxide in the paint, which is needed for wet hiding. Specifically, a person having ordinary skill in the art at the time of invention would appreciate that adding white mineral pigment to a paint with a PVC of 70% allows for the production of a second paint with a PVC closer to the CPVC, such that less titanium dioxide is required, which lowers the overall cost of the paint formulation while still allowing for the production of a paint with the desired opacity.

With respect to **claim 49**, BROOME teaches that the optical property that can be improved by adding the pigment-slurry is tint strength. Col. 3, Lines 20-25.

(5)

Claims 9-15, 19, 30, 36 and 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over BROOME et al. (U.S. Patent No. 6,074,474), as applied to claims 5, 20, 38-37, 40-41 and 46-47, and further in view of SARE et al. (U.S. Publication No. 2002/0088376).

With respect to **claim 9**, BROOME teaches that diatomaceous earth can be used as the pigment white mineral, but is silent as to whether the diatomaceous earth is flux-calcined.

However, SARE, which deals with mineral additives to paints, teaches that flux-calcined diatomaceous earth can be included as a pigment in paints as a secondary binder. Paragraph 127. Specifically, SARE teaches that flux-calcined diatomaceous earth can be substituted for calcium carbonate, silica, nephaline syenite or diatomaceous earth. Paragraph 127. A person having ordinary skill in the art would appreciate, based on the previously discussed fungibility, that adding flux-calcined diatomaceous earth as a white mineral pigment to a paint can also improve the optical properties of the paint.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention to use flux-calcined diatomaceous earth as the white mineral because SARE teaches that flux-calcined diatomaceous earth functions similarly to calcium carbonate, silica and nephaline syenite in paint, which BROOME teaches improves the optical properties of paint. A person having ordinary skill in the art would expect, based on BROOME and SARE, that adding flux-calcined diatomaceous earth to a paint also improves the optical properties of the paint.

With respect to **claim 10**, BROOME teaches that white minerals can be added to a latex paint formulation to obtain a second latex paint formulation with improved properties, but is silent as to whether kaolin can be one of the white mineral additives.

However, SARE teaches that kaolin, which is a white mineral, can be added to paints and that kaolin has a good combination of flattening characteristics and matting characteristics. Paragraphs 7-8.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention to use kaolin as the white mineral additive because SARE teaches that kaolin possesses a unique combination of good flattening characteristics and good optical characteristics. BROOME specifically teaches that white minerals are added to paints to improve the optical characteristics. BROOME, Col. 3, Lines 24-25.

With respect to **claim 11**, SARE teaches that the kaolin can be calcined kaolin, hydrous kaolin, or a mixture thereof. Paragraphs 3, 7-8 and 10-13.

With respect to **claim 12**, SARE teaches that the kaolin is in particle form, meaning that the kaolin is delaminated, i.e. the kaolin is separated from the layers that make it up. Paragraph 9.

With respect to **claims 13 and 14**, SARE teaches that the kaolin can be fully or partially calcined. Paragraph 118.

With respect to **claim 15**, SARE teaches that the kaolin can be flash calcined. Paragraph 119.

With respect to **claim 19**, SARE teaches that blends of kaolin and calcium carbonate can be used as white mineral additives to paints. Paragraph 127.

With respect to **claim 30**, SARE teaches that a white pigment blend comprising kaolin has an oil absorption of 101%. Table 10.

With respect to **claim 36**, SARE teaches that blends of kaolin and calcium carbonate can be used as white mineral additives to paints. Paragraph 127.

With respect to **claim 42**, BROOME teaches a process for preparing a paint that comprises obtaining a paint and adding a white mineral pigment-slurry to the paint to

obtain a second paint. Col. 3, Lines 32-33. BROOME further teaches that conventional paints (control samples) have a PVC of 60%, which lies within the claimed range. Table 3. Finally, BROOME teaches that after addition of the pigment-slurry to the paint formulation (first paint), a latex paint formulation (second paint) with improved tint strength is obtained. Col. 3, Lines 32-33. SARE teaches that kaolin is one form of a mineral additive that can be added to paint formulations to improve the optical properties of a paint. Paragraph 7.

With respect to **claim 43**, BROOME teaches that the optical property that can be improved by adding the pigment-slurry is tint strength. Col. 3, Lines 20-25.

(6)

Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over BROOME et al. (U.S. Patent No. 6,074,474), as applied to claims 5, 20, 38-37, 40-41 and 46-47, and further in view of HINLEY et al. (U.S. Patent No. 3,942,999).

With respect to **claims 26 and 27**, BROOME teaches that the pigment-slurry can be added to paints and specifically singles out latex paints, but it silent as to whether acrylic or oil-based paints can also be used.

However, HINLEY, which deals with pigments, teaches that it is known in the art to add pigments to oil-based or acrylic paints. Col. 3, Lines 64-68.

Therefore, it would have been obvious to a person having ordinary skill in the art to add pigment-slurry to oil-based or acrylic paints because HINLEY teaches that doing so is known in the art and a person having ordinary skill in the art would appreciate that the addition of pigment-slurry to oil-based or acrylic paints would similarly improve the

optical properties of those types of paints as the addition improves the optical properties of latex paints.

(7)

Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over BROOME et al. (U.S. Patent No. 6,074,474) in view of FREEMAN et al. (U.S. Patent No. 5,167,707).

With respect to **claim 31**, BROOME teaches that oil absorption is an important quality in the pigments but is silent as to whether any of the pigments in the slurry have an oil absorption of greater than 110%.

However, FREEMAN, which deals with pigments for paints, teaches that sodium aluminosilicate, which is a white mineral, can be added to paints to improve the paint flatting and that these pigments have can have an oil absorption of up to 110%. Col. 3, Lines 54-62.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention to use mineral pigments with an oil absorption of at least 110% because BROOME teaches that oil absorption is an important characteristic of the pigments in the pigment-slurry and FREEMAN teaches that sodium aluminosilicate pigments, which are among the class of compounds that BROOME says can be used as the white mineral pigments, have an oil absorption of 110% and improve paint flatting when added to paint.

(8)

Claims 44-45 and 50-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over BROOME et al. (U.S. Patent No. 6,074,474) in view of SARE et al. (U.S. Publication No. 2002/0088376), as applied to claims 9-15, 19, 30, 36 and 42-43 above, and further in view of ADKINS (U.S. Patent No. 5,171, 631).

With respect to **claim 44**, BROOME teaches a process for preparing a paint that comprises obtaining a first paint and adding a white mineral pigment-slurry to the paint to obtain a second paint with improved optical properties, one of which can be tint strength. Col. 3, Lines 24-25, 32-33. SARE teaches that the white mineral additive can be hydrous kaolin. Paragraphs 3, 7-8 and 10-13. Finally, BROOME teaches that after addition of the pigment-slurry to the paint formulation (first paint), a latex paint formulation (second paint) with improved tint strength is obtained. Col. 3, Lines 32-33. BROOME teaches that the initial paint, which is a conventional latex formulation, can have a PVC of 60%, but it silent as to whether a paint with a PVC of about 70% is used.

However, ADKINS, which deals with pigment additions to paints, teaches that at a PVC between 50% and the CPVC, both dry hiding and wet hiding, which influence opacity, begin to exhibit effects in the paint formulation with dry hiding predominating when CVPC is exceeded. Col. 2, Lines 18-24. Titanium dioxide is required for wet hiding. Col. 2, Lines 22-24. A person having ordinary skill in the art would appreciate that at a PVC of 70%, the effect of dry hiding begins to increase as PVC approaches CPVC, which allows for the reduction in the amount of titanium dioxide, which BROOME teaches is the single greatest line-item expense in paint formulation. BROOME, Col. 1, Lines 40-40.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention to use a first paint with a PVC of about 70% because ADKINS teaches that such a paint exhibits dry hiding and wet hiding, which lowers the demand for titanium dioxide in the paint, which is needed for wet hiding. Specifically, a person having ordinary skill in the art at the time of invention would appreciate that adding white mineral pigment to a paint with a PVC of 70% allows for the production of a second paint with a PVC closer to the CPVC, such that less titanium dioxide is required, which lowers the overall cost of the paint formulation while still allowing for the production of a paint with the desired opacity.

With respect to **claim 45**, BROOME teaches that the optical property that can be improved by adding the pigment-slurry is tint strength. Col. 3, Lines 20-25.

With respect to **claim 50**, BROOME teaches a process for preparing a paint that comprises obtaining a first paint and adding a white mineral pigment-slurry to the paint to obtain a second paint with improved optical properties, one of which can be tint strength. Col. 3, Lines 24-25, 32-33. BROOME teaches that calcium carbonate can be included with other white minerals in the pigment slurry. Col. 4, Lines 28-30. Additionally, SARE teaches that calcium carbonate and kaolin can be added in combination to paints to improve the optical properties. Paragraph 127. Finally, BROOME teaches that after addition of the pigment-slurry to the paint formulation (first paint), a latex paint formulation (second paint) with improved tint strength is obtained. Col. 3, Lines 32-33.

ADKINS teaches that at a PVC between 50% and the CPVC, both dry hiding and wet hiding, which influence opacity, begin to exhibit effects in the paint formulation with dry hiding predominating when CVPC is exceeded. Col. 2, Lines 18-24. Titanium dioxide is required for wet hiding. Col. 2, Lines 22-24. A person having ordinary skill in the art would appreciate that at a PVC of 70%, the effect of dry hiding begins to increase as PVC approaches CPVC, which allows for the reduction in the amount of titanium dioxide, which BROOME teaches is the single greatest line-item expense in paint formulation. BROOME, Col. 1, Lines 40-40.

With respect to **claim 51**, SARE teaches that the kaolin can be calcined kaolin. Paragraphs 3, 7-8 and 10-13.

With respect to **claim 52**, BROOME teaches that the optical property that can be improved by adding the pigment-slurry is tint strength. Col. 3, Lines 20-25.

With respect to **claim 53**, ADKINS teaches that the addition of pigments is also used to provide color to the obtained paint. Col. 2, Lines 63-65.

With respect to **claim 54**, ADKINS teaches that the pigments are used to provide color to the obtained paint. Col. 2, Lines 63-65. A person having ordinary skill in the art at the time of invention would appreciate that the pigments could be used to darken or lighten the obtained paint depending on the paint color that is desired. Additionally, a person having ordinary skill in the art would appreciate that even if pigments of the same color are added to the first paint to obtain the second paint, the presence of the slurry material, as taught by BROOME, could act to dilute or increase the concentration of the pigments in the second paint depending on the amount of material used to create

the slurry relative to the pigment concentration in the slurry and the pigment concentration in the first paint.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELI MEKHLIN whose telephone number is (571)270-7597. The examiner can normally be reached on 5/4/9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/ELI MEKHLIN/
Examiner, Art Unit 1793

/J.A. LORENGO/
Supervisory Patent Examiner, Art Unit 1793